

# Big Data Management and Employee Resilience of Deposit Money Banks in Port Harcourt, Rivers State, Nigeria

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## ABSTRACT

The purpose of this study was to examine the relationship between Big Data Management and Employee Resilience of Deposit Money Banks in Port Harcourt, Rivers State, Nigeria. Primary data was generated through self-administered questionnaire. This study was conducted in 17 Deposit Money Banks in Port Harcourt, Rivers State. The study used descriptive technique through the adoption of cross sectional research survey design. A total population of one hundred and two (102) managerial staff of the target banks was studied. A census sampling was adopted since the population was small. The reliability of the instrument was achieved by the use of the Cronbach Alpha coefficient with all the items scoring above 0.70. The hypotheses were tested using the Pearson Product Moment Correlation Coefficient with the aid of Statistical Package for Social Sciences version 23.0. The results of analysed data showed the dimensions of big data management (data volume and data variety) significantly correlated positively with the measures of employee resilience; adaptive capacity and situational awareness. The study concludes that big data management significantly predicted employee resilience in Deposit Money Banks in Port Harcourt, Rivers State. Therefore, the study recommends that the dimensions treated in this study be adopted by management of banks as 21st century organization is gradually shifting interest from customers' centric to data centric.

**KEYWORDS:** *Big Data Management, Employee Resilience, Data Volume, Data Variety, Adaptive Capacity, Situational Awareness*

## INTRODUCTION

Organizations survive not based on the number of resources they have decided to engage to work for them but based on how productive those resources engaged are in the course of pursuing the organizational goals. Resources that are productive are said to be efficient. Efficient material and human resources create values. Values are created by surmounting challenges and solving problems. Organizational success is the ability of an organization to attain its set goals. The ability of an organization actualizing its set goals depends on capabilities and capacity of its resources. There is a way by which the success of organization is measured. It is measured in terms of performance. Performance of an organization is measured by two factors namely, effectiveness and efficiency (Bestman&Elekwachi, 2019). Effective decision making requires information that crosses organizational and functional boundaries. Business information needs supplier/supply chain information, financial and business performance information, customer information, employee information (Bestman&Elekwachi, 2019). This is only achievable when data is a well-articulated data management system.

Data has become a stream flowing into every area of the global economy. Companies churn out an increasing volume of transactional data, capturing trillions of bytes of data about their customers, supplies, and operations. Millions of networked sensors are being embedded into the physical

world in devices such as mobile phones, smart energy meters, automobiles, and industrial machines that sense, create and communicate data in the age of the internet of things. Indeed, as companies and organizations go about their business and interact with individuals, they are generating a tremendous amount of digital "exhaust data" that is, data that are created as a by-product of other activities. Social media sites, smart phones, and other consumer devices including PCs and laptops have allowed billions of individuals around the world to contribute to the amount of Big Data available and the growing volume of multimedia content has played a major role in the exponential growth in the amount of Big Data (James, Michael, Brad, Jacques, Richard, Charles& Angela, 2011).

The concept of big data has been around for a while, originally referring to innumerable data unreceptive to traditional means of collation, storage or analysis. This has evolved over time to be termed "Big Data". It includes the process and technology that enables companies sort through these large amounts of data to unearth hidden correlations, patterns and trends in real time, ultimately providing insight and platform for better decision making. Interestingly, deposit money banks are starting to realize the importance of data availability in large amounts in order to make the right decisions and support their strategies in the face of turbulent business environment in Nigeria. The deposit money banks warehouse a lot of data on a daily basis. With

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the development of new technologies, the internet and social networks, the production of digital data is constantly growing. The term "Big Data" refers to the heterogeneous mass of digital data produced by companies and individuals whose characteristics (large volume, different forms, speed of processing) require specific and increasingly sophisticated computer storage and analysis tools, (Riahi&Riahi, 2018).

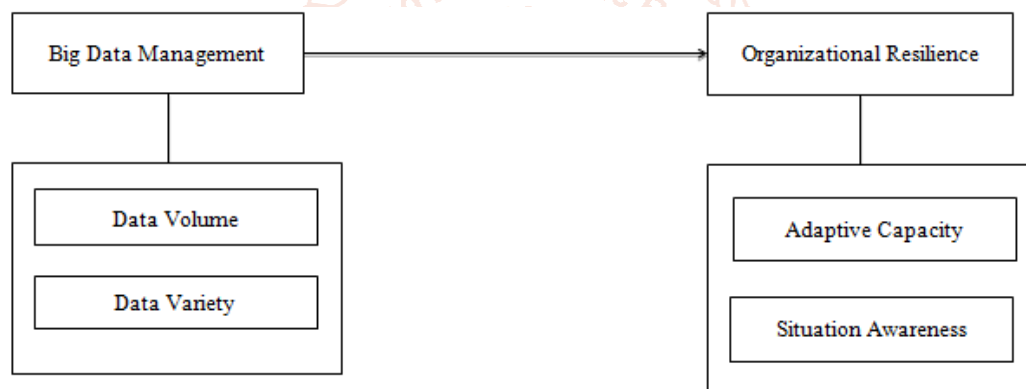
The deposit money bank as an organization have big data and that, they are constantly creating a lot of data through various streams of their daily business activities like debit cards, transaction, e-commerce platforms, phones, computers and surveillance cameras etc. Having this numerous data in the organization custody is not a sure way for productivity and efficient performance. Big data availability has no meaning, until such big data have been extracted to make meaningful information which knowledge can be derive for effective decision making.

Deposit Money Banks as financial institution have the most important role of lubricating the machinery of any given country so as to enhance its economic operations. According to Bello (2005), banking system is the backbone of financial intermediation through the mobilization and channeling of financial resources. Deposit money banks in delivering their significant role in the economy, facilitate financial settlement through the payment system, influence money market rates

and provide a means for international payment. The sector mobilizes funds from the surplus-spending units into the economy and by on-lending such funds to the deficit spending units for investment, banks in the process increase the quantum of national savings and investment (Mordi, 2004).

The purpose of the study therefore was to examine the relationship between big data management and employee resilience of deposit money banks in Port Harcourt, River State. This study was guided by the following research question:

1. What is the relationship between data volume and adaptive capacity of deposit money banks in Port Harcourt, River State?
2. What is the relationship between data volume and situation awareness of deposit money banks in Port Harcourt, River State?
3. What is the relationship between data variety and adaptive capacity of deposit money banks in Port Harcourt, River State?
4. What is the relationship between data variety and situation awareness of deposit money banks in Port Harcourt, River State?



**Fig.1 Conceptual framework for the relationship between big data management and organizational resilience**  
Source: Author's Desk Research, 2021

## LITERATURE REVIEW

### Theoretical Foundation

#### The Resource Based-View (RBV)

The resource based view theory of the firm is an economic baseline theory. The theory was propounded by Wernerfelt in 1984. According to Barney (1991), resources refer to a firm's assets, capabilities, organizational processes, firms' attributes, information, knowledge etc controlled by a firm that enable the firm to conceive and implement strategies that improve its efficiency and effectiveness". Resources are those assets that are tied semi-permanently to the firm. It includes economic, physical capital, human capital, technological and organizational capital resources, or assets used by the firm to develop, manufacture, improve, and deliver products and services to its customers, its reputation and informational resources, corporate culture of the firm as well as effective management team, (Barney, 1991). The resources of a firm comprise of tangible (physical resources) and intangible resources (employees experience, skills, and firm's goodwill) which are the sources of the firm's competitive advantage. Competitive advantage of the firm is dependent on the characteristics of a firm's resources, (Barney, 1991).

#### Big Data Management

Big data management involves the systematic process of planning, organizing, and controlling of large volume of organizational data for business prosperity. The term big data refer to the extremely large and varied datasets that may be analyzed to reveal patterns, trends, and associations; they are often too large to store in traditional database sets, process and analyse with traditional storage and computing methods, (Davenport, 2012). The term "big data Management" refers to the evolution and use of technologies that provide the right user at the right time with the right information from a mass of data that has been growing exponentially for a long time in our society. The challenge is not only to deal with rapidly increasing volumes of data but also the difficulty of managing increasingly heterogeneous formats as well as increasingly complex and interconnected data.

Big Data Management is classified into; Descriptive analytics: It consists of asking the question, what is happening? It is a preliminary stage of data processing that creates a set of historical data. Data mining methods organize data and help uncover patterns that offer insight. Descriptive analytics provides future probabilities and trends and gives an idea

about what might happen in the future. Diagnostic Analytics; it consists of asking the question: Why did it happen? Diagnostic analytics looks for the root cause of a problem. It is used to determine why something happened. This type attempts to find and understand the causes of events and behaviors. Predictive Analytics; it consists of asking the question: What is likely to happen? It uses past data in order to predict the future. It is all about forecasting. Predictive analytics uses many techniques like data mining and artificial intelligence to analyze current data and make scenarios of what might happen. Prescriptive Analytics; it consists of asking the question: What should be done? It is dedicated to finding the right action to be taken. Descriptive analytics provides a historical data, and predictive analytics helps forecast what might happen. Prescriptive analytics uses these parameters to find the best solution.

### Data Volume

The quantity of analyzed data exceeds the capability of conventional analytics and statistical modeling tools. Analysis of big data scales to handle petabytes and has the possibility to handle larger volumes. Pence (2014) add that, the sheer volume of stored data is exploding, and IBM predicts that by 2020 there will be 35 zettabytes stored. Data volume represents the amount of data generated, stored and operated within the system. The increase in volume is explained by the increase in the amount of data generated and stored, but also by the need to exploit it. Big data means the datasets which cannot be recognized, obtained, managed, analyzed, and processed by present tools. Different definitions of big data have been given by different users of Big Data and different analysts of Big Data like research scholars, data analysts, and technical practitioners. According to Apache Hadoop "Big data is a dataset which could not be captured, managed, and processed by general computers within an acceptable scope. Actually big data was defined in 2001 for the first time. Doug Laney, defined the 3Vs model, i.e., Volume, Variety and Velocity. In spite of the fact that the 3Vs model was not used to define big data, Gartner and many other organizations, like IBM3 and Microsoft4 still uses the "3Vs" model to define big data (5). In the "3Vs" model, Volume means, the dataset is so big and large that it is very difficult to analyze; Velocity means the data collected and gathered so rapidly to utilize it to the maximum; Variety shows different types of data like structured, semi-structured and unstructured data i.e. audio, video, webpage, and text. IDC (International data Corporation), one of the most dominant leaders in the research fields of Big Data, is of different view about Big Data.

### Data Variety

Big data looks at all sorts of in-formation beyond what is structured and stored in the DW (Data Ware-house). It also has the ability to assimilate stored data and both structured and unstructured data feeds from external sources. Neef (2010) states that the ability to apply sophisticated algorithms and powerful computers to large data sets, revealing correlations and insights previously inaccessible through conventional data warehousing or BI tools, makes big data different from just "more data".

Variety represents the multiplication of the types of data managed by an information system. This multiplication leads to a complexity of links and link types between these data. The variety also relates to the possible uses associated with a raw data. Data come from different data sources. For the

first, data can come from both internal and external data source. More importantly, data can come in various format such as transaction and log data from various applications, structured data as database table, semi-structured data such as XML data, unstructured data such as text, images, video streams, audio statement, and more. There is a shift from sole structured data to increasingly more unstructured data or the combination of the two.

This leads us to the most widely used definition in the industry. Gartner (2012) defines Big Data in the following. Big data is high-volume, high-velocity and/or high-variety information assets that demand cost-effective, innovative forms of information processing that enable enhanced insight, decision making, and process automation. It should by now be clear that the "big" in big data is not just about volume. While big data certainly involves having a lot of data, big data does not refer to data volume alone.

### Employee Resilience

In order to focus the empirical enquiry of individual resilience in organizational settings to the context of 'work-specific' resilient behaviours, the concept 'employee resilience' has been proposed (Näswall, Kuntz & Malinen, 2015). In line with the ecological perspective on resilience, employee resilience can be defined as "employee capability, facilitated and supported by the organization, to utilize resources to continually adapt and flourish at work, even if/when faced with challenging circumstances" (Näswall *et al.*, 2015). A key assertion of this definition is that employee resilience is something that can be facilitated by support from the organization in the form of 'organizational enablers'. It is argued that employee resilience contributes to key performance drivers, including positive employee attitudes and behaviours (Näswall *et al.*, 2015). Additionally, employee resilience may be seen as a protective factor on employees' reactions to change in the work place (Shin, Taylor & Seo, 2012). In the context of wellbeing at work, research indicates that resilient employees are more responsive to necessary organisational changes and possess a greater capacity for recovery from workplace disruptions than non-resilient employees (Shin *et al.*, 2012).

The employee resilience construct is distinct from other, seemingly analogous constructs in three ways. Firstly, unlike trait resilience, employee resilience is operationalized in terms of workplace behaviours, rather than attitudes or beliefs. Secondly, the extent to which the organization provides work-related resources influences the enactment of resilient workplace behaviours, rather than just psychological perspectives toward work. Thirdly, resilient behaviours can be developed and enacted in any work environment, even in the absence of a crisis trigger (Näswall *et al.*, 2015). Overall, the definition of employee resilience reflects a behavioural construct which is different from, but related to, existing constructs that describe the capacity to thrive following, or despite the challenges.

### Adaptive Capacity

Adaptive capacity describes context specific organizational capabilities that facilitate continuous evolvement to keep up with the needs of the operating environment (Meyer & Allen, 1991). Adaptive capacity has been analyzed through coping ranges, by the conditions that a system can deal with, accommodate, adapt to, and recover from (Smit & Pilifosova, 2003). Most firms can cope with normal conditions and moderate deviations from the norm, but may find it



challenging to cope with exposure to extreme events that may lie outside their coping range (Ahiauzu&Jaja, 2015). Some scholars use coping ability to address short-term capacity to just survive, and employ adaptive capacity to address long-term and more sustainable adjustments. Organizations' adaptive capacity and coping range are not static; they are flexible and respond to changes in economic, social, political and institutional conditions over time (Smit&Wandel, 2006) cited in Ahiauzu&Jaja (2015).

### Situational Awareness

The historicity of the term "situation awareness" is traceable to the military, where pilots are required to understand, absorb, and act on large volumes of information to enable them perform their roles (Endsley, 1995). An organization that is not always conscious of its operating environment is bound to make costly mistakes. Situation awareness describes an organization's awareness of its business-scape, and its understanding of what that information means for its present and future wellbeing (Ahiauzu&Jaja, 2015; Endsley, Bolte& Jones, 2003). The knowledge a firm has on its operating environment is what the concept of situation awareness describes (McManus et al, 2008). This includes the ability to anticipate opportunities and possible threats, disturbances and the ability to correctly identify potential crisis and their likely effects (Tamunomiebi, 2018).

### Big Data Management and Employee Resilience

Big data implies enormous volumes of data. Prior to now, data used to be created by employees. Now that data is generated by machines, networks and human interaction on systems like social media the volume of data to be analyzed is massive. Electronic commerce channels increase the depth/breadth of data available about a transaction at any point of interaction. The lower cost of e-channels enables an enterprise to offer its goods or services to more individuals or trading partners, and up to 10x the quantity of data about an individual transaction that may be collected thereby increasing the overall volume of data to be managed. Furthermore, as enterprises come to see information as a tangible asset, they become reluctant to discard. Typically,

increases in data volume are handled by purchasing additional online storage to help organization in storing data. However, as data volume increases, the relative value of each data point decreases proportionately – resulting in a poor financial justification for merely incrementing online storage. Because of this high volume of data availability to the organization, management and employees are able to have more information in their disposal for solving problem that may challenge the success of the organization.

This study thus hypothesizes that:

**Ho<sub>1</sub>:** There is no significant relationship between data volume and adaptive capacity in deposit money banks in Port Harcourt, River State, Nigeria.

**Ho<sub>2</sub>:** There is no significant relationship between data volume and Situation Awareness in deposit money banks in Port Harcourt, River State, Nigeria.

**Ho<sub>3</sub>:** There is no significant relationship between data variety and adaptive capacity in deposit money banks in Port Harcourt, River State, Nigeria.

**Ho<sub>4</sub>:** There is no significant relationship between data variety and Situation Awareness in deposit money banks in Port Harcourt, River State, Nigeria.

### METHODOLOGY

Primary data was generated through self-administered questionnaire. This study was conducted in 17 Deposit Money Banks in Port Harcourt, Rivers State. The study used descriptive technique through the adoption of cross sectional research survey design. A total population of one hundred and two (102) managerial staff of the target banks was studied. A census sampling was adopted since the population was small. The reliability of the instrument was achieved by the use of the Cronbach Alpha coefficient with all the items scoring above 0.70. The hypotheses were tested using the Pearson Product Moment Correlation Coefficient with the aid of Statistical Package for Social Sciences version 23.0.

## DATA ANALYSIS AND RESULTS

### Bivariate Analysis

The level of significance 0.05 was adopted as a criterion for the probability of accepting the null hypothesis in ( $p > 0.05$ ) or rejecting the null hypothesis in ( $p < 0.05$ ).

**Table 1 Correlation Matrix for Data Volume and Employee Resilience**

		Data Volume	Adaptive Capacity	Situational Awareness
Data Volume	Pearson Correlation	1	.932**	.889**
	Sig. (2-tailed)		.000	.000
	N	90	90	90
Adaptive Capacity	Pearson Correlation	.932**	1	.936**
	Sig. (2-tailed)	.000		.000
	N	90	90	90
Situational Awareness	Pearson Correlation	.889**	.936**	1
	Sig. (2-tailed)	.000	.000	
	N	90	90	90

\*\*.. Correlation is significant at the 0.01 level (2-tailed).

Source: SPSS output version 23.0

**Ho<sub>1</sub>:** There is no significant relationship between data volume and adaptive capacity in deposit money banks in Port Harcourt, River State, Nigeria.

The correlation coefficient ( $r$ ) shows that there is a significant positive relationship between data volume and adaptive capacity. The  $r$  value 0.932\*\* indicates this relationship and it is significant at  $p < 0.05$ . The correlation coefficient represents a high correlation indicating a strong relationship at 95% level of confidence. Therefore, based on empirical findings

the null hypothesis earlier stated is hereby rejected and the alternate upheld. Thus, there is a significant relationship between data volume and adaptive capacity in deposit money banks Rivers State.

**Ho<sub>2</sub>:** There is no significant relationship between data volume and Situation Awareness in deposit money banks in Port Harcourt, River State, Nigeria.

The correlation coefficient ( $r$ ) shows that there is a significant positive relationship between data volume and situational awareness. The  $r$  value 0.889\*\* indicates this relationship and it is significant at  $p$  0.000<0.05. The correlation coefficient represents a high correlation indicating a strong relationship at 95% level of confidence. Therefore, based on empirical findings the null hypothesis earlier stated is hereby rejected and the alternate upheld. Thus, there is a significant relationship between data volume and situational awareness in deposit money banks in Rivers State.

**Table 2 Correlation Matrix for Data Variety and Employee Resilience**

		Data Variety	Adaptive capacity	Situational Awareness
Data Variety	Pearson Correlation	1	.944**	.909**
	Sig. (2-tailed)		.000	.000
	N	90	90	90
Adaptive capacity	Pearson Correlation	.944**	1	.936**
	Sig. (2-tailed)	.000		.000
	N	90	90	90
Situational awareness	Pearson Correlation	.909**	.936**	1
	Sig. (2-tailed)	.000	.000	
	N	90	90	90

\*\* . Correlation is significant at the 0.01 level (2-tailed).

**Source: SPSS output version 23.0**

**Ho<sub>3</sub>:** There is no significant relationship between data variety and adaptive capacity in deposit money banks in Port Harcourt, River State, Nigeria.

The correlation coefficient ( $r$ ) shows that there is a significant positive relationship between data variety and adaptive capacity. The  $r$  value 0.944\*\* indicates this relationship and it is significant at  $p$  0.000<0.05. The correlation coefficient represents a high correlation indicating a strong relationship at 95% level of confidence. Therefore, based on empirical findings the null hypothesis earlier stated is hereby rejected and the alternate upheld. Thus, there is a significant relationship between data variety and adaptive capacity of deposit money banks in Port Harcourt, Rivers State.

**Ho<sub>4</sub>:** There is no significant relationship between data variety and Situation Awareness in deposit money banks in Port Harcourt, River State, Nigeria.

The correlation coefficient ( $r$ ) shows that there is a significant positive relationship between data variety and situational awareness. The  $r$  value 0.909\*\* indicates this relationship and it is significant at  $p$  0.000<0.05. The correlation coefficient represents a high correlation indicating a strong relationship at 95% level of confidence. Therefore, based on empirical findings the null hypothesis earlier stated is hereby rejected and the alternate upheld. Thus, there is a significant relationship between data variety and situational awareness in deposit money banks in Port Harcourt, Rivers State.

## DISCUSSION OF FINDINGS

This study examined the relationship between big data management and employee resilience of deposit money banks in Port Harcourt, Rivers State. The findings revealed a positive significant relationship between big data management and employee resilience of deposit money banks in Rivers State using the Pearson Product Moment Correlation Coefficient through the help of SPSS version 23 and at 95% confidence interval. The findings of this study confirmed that there is a positive significant relationship between big data management and employee resilience of

deposit money banks in Rivers State. This reinforces previous studies by Ling and Nasurdin(2010), it is important for an organization to adopt supportive big data management that can motivate and encourage employees to be creative and innovative.

## Data Volume and Employee Resilience

The first and second hypotheses sought to examine the relationship between data volume and employee resilience. Data analysis revealed that there is a positive and significant relationship between data volume and employee resilience. This finding is in line with earlier views of Schuler and Jackson (1987) who argue that firms that pursue an innovation strategy are likely reward employees in a bid encourage them to develop skills that can be used in different positions within the organization. Chen and Huang (2009) argue that a benefit of rewarding employees is that it may foster employees to strive and gain new knowledge, get new insights and develop innovative minds and skills, in a bid to offer more and attract management appreciation.

## Data Variety and Employee Resilience

The third and fourth hypotheses sought to examine the relationship between data variety and employee resilience. The test of hypotheses revealed that there is a significant and positive relationship between data variety and employee resilience of deposit money bank in Port Harcourt. The finding agreed with the views of Dorrego and Fernandez-Jardon (2011) who distinguished the product-process innovation and the management innovation. Innovation is regarded as an evolutionary, nonlinear, and interactive process between the firm and its environment (Universidade da Beira Interior, 2014). Organizational innovation is a process which has to be dynamic and iterative in order to create and modify the initial idea and develop this idea to produce products, services, processes, structures, or policies that are brand new to the organization or somehow modified in order to improve some already existing processes or products (Zhuang 1995, Nohria& Gulati, 1996). Additionally, outcome reward management and control were found to be positively related to technological innovation.

## CONCLUSION

In the digital economy, data has been identifying as the major factor for successful organizational performance. The resilient nature of employee in the face of this technological competition among business competitors in integrating business data is the lead way to success. In recent time, the adage data is the new oil has become a trending statement that captain of industries has hold unto in their day to day business transactions. As oil has been seen to fuel the industrial economy for decades, the digital economy is fuelled through data. Therefore, the success of the 21<sup>st</sup> century organization depends on the availability of data to the organization. It is the right time that, business managers invest more in data and good quality employee that can drive data integration. Mere gathering of data into the organization is not enough to enjoy the richness of big data management. But having employees with the robust knowledge of extracting relevant information from this pool of data is the sure way for deriving value of big data management.

## RECOMMENDATIONS

1. Deposit money banks in Port Harcourt, Rivers State through data volume should therefore integrate effective big data management within the wider management activities to ensure it is part of the organizational long-term objectives and goals to enhance high performance. Given that such practices will help in engendering employee engagement and inclusiveness that are lacking in the organizational culture.
2. Deposit money banks through data variety should adjust their policy on employee resilience to ensure that the priority given to employees in the banks reflect the content practices that will spur Nigerian employees to become more creative and participative in the development of big data management in the shortest possible time

## REFERENCES

- [1] Ahiauzu, L. U., & Jaja, S. A. (2015). Process innovation and organizational resilience in public Universities in South-South, Nigeria. *International Journal of Managerial Studies and Research*, 3(11), 102-111.
- [2] Barney, J. (1991). Firm resources and sustained competitive advantage. *Journal of Management*, 17(1), 99-120.
- [3] Bello, Y. A. (2005). Banking sector reforms and bank consolidation in Nigeria. *Bullion CBN Publication*, 29(2), 48 – 65.
- [4] Bestman, A. E., & Elekwachi, H. W. (2019). Business intelligence system strategies and organizational success in public hospitals in Rivers State, Nigeria. *European Journal of Business and Innovation Research*, 7(2), 1-22.
- [5] Chen, C.-J. & Huang, J.-W. (2009). Strategic human resource practices and innovation performance – The mediating role of knowledge management capacity. *Journal of Business Research*, 62, 104-114.
- [6] Davenport, T. H. (2012). The Human Side of Big Data and High-Performance Analytics. *International Institute for Analytics*, pp. 1-13
- [7] Endsley, M. R., Bolte, B., & Jones, D. G. (2003). *Designing for situation awareness: An approach to user-centred design*. London: Taylor & Francis.
- [8] James, M., Michael, C., Brad, B., Jacques, B., Richard D., Charles, R., & Angela, H. B. (2011). Big Data: The next frontier for innovation, competition, and productivity”, [www.McKinsey.com](http://www.McKinsey.com), retrieved 23/06/2020.
- [9] James, M., Michael, C., Brad, B., Jacques, B., Richard D., Charles, R., Angela H. B. (2011), “Big Data: The next frontier for Innovation, Competition, and Productivity”, [www.McKinsey.com](http://www.McKinsey.com), retrieved 23/02/14.
- [10] Ling, T. C., & Nasurdin, A. M. (2010). Human resource management practices and organizational innovation: An empirical study in Malaysia. *Journal of Applied Business Research (JABR)*, 26(4), 105-116.
- [11] McManus, S., Seville, E., Vargo, J. & Brundsdon, D. (2008). Facilitated process for improving organization resilience. *Natural Hazards Review*, 9(2), 81 – 90.
- [12] Mordi, C. N. O. (2004). Institutional framework for the regulation and supervision of the financial sector. *Central Bank of Nigeria Bullion*, 28(1), 25 – 30.
- [13] Näswall, K., Kuntz, J., & Malinen, S. (2015). Employee Resilience Scale (EmpRes): Technical Report. Resilient Organizations Research Report.
- [14] Neef, D. (2010). Digital exhaust: What every-one should know about big data, digitization and digitally driven innovation.
- [15] Nohria, N., & Gulati, R. (1996). Is slack good or bad for innovation? *Academy of Management Journal*, 39 (5), 1245-1264
- [16] Pence, H. E. (2014). What is big data and why is it important? *Journal of Educational Technology Systems*, 43(2), 159 – 171.
- [17] Riahi, Y., & Riahi, S. (2018). Big Data and Big Data Analytics: Concepts, types and technologies. *International Journal of Research and Engineering*, 5(9), 524 – 528.
- [18] Shin, J., Taylor, M. S., & Seo, M. (2012). Resources for change: the relationships of organizational inducements and psychological resilience to employees' attitudes and behaviors toward organizational change. *Academy of Management journal*, 55(3), 727 – 748.
- [19] Tamunomiebi, M. D. (2018). Ethics training as predictor of organizational resilience in tertiary health institutions in Bayelsa State, Nigeria. *International Journal of Social Sciences and Management Research*, 4(2), 56-65.